The Good Manager

LOW-TECH PLATFORM CONCEPTION

LOGBOOK

Erasmus+

THE GOOD MANAGER

The Good Manager is a project supported by The European Commission through the Erasmus+ program. Productions of this project are available at https://thegoodmanager.eu, an eco-design platform available in English, French, Italian, Spanish and Bulgarian.

In the context of the climate crisis, saving and rationalizing energy also concerns Internet and related digital activities. The Good Manager goal is to participate in training professionals in charge of digital project on these issues, to enable them to develop digital strategies that fully integrate the issues of social and environmental responsibility.

Low-tech design of websites can also have an impact on accessibility, as such websites tend to be less cumbersome, with limited visual effects. Partners of this project believe that a more sustainable Internet must also be a more accessible Internet.

The project will include, on a **low-tech platform**, **micro-learning modules** on Accessibility, Eco-design and Sustainable project management, and a **collection of good practices**.

PARTNERSHIP ENGAGEMENT

1 • Design a low-tech documented accessible and multilingual platform with micro-learning.

2 • Disseminate our resources in the accessible and low-consumption digital book standard to enable offline consultation

3 • Implement project management tools that are less energy-consuming and more respectful of privacy.

4 • Reduce the number of physical transnational meetings and optimize them in terms of travel time and transports.

5 • Include people with special needs at all stages of the project.

TABLE OF CONTENTS

INTRODUCTION

This commented guide will be presenting the different stages of the platform design and creation, as well as the tools used and the elements of site control and evaluation.

The website is the key tool of the project: through its design and the content it hosts, we hope to participate in the evolution of professional practices in the digital sector. Through this commented guide, we hope to encourage its replication and the implementation of its principles in other digital projects. This guide will therefore be a combination of a step-by-step tutorial and feedback. This document will aim to become a "generic" specification for a low-design, multilingual website with complex content. The website was first thought of an experiment in progress, an opportunity to test new ways of doing things and making a platform with e-learning and wiki features. It was documented along the way through “Projects logs”, and this final guide.

A LOW-TECH PLATFORM

We wanted to build a platform as an experiment, documenting along the way the technical choices and issues to be able to describe how to create such a website. The platform and its hosted resources aim to meet the highest criteria set by international bodies such as the WCAG for accessibility or the Eco-Index for absolute and relative environmental performance, technical footprint and associated environmental footprint. Choosing a low-tech approach seemed natural in the current context: few testimonies of actors choosing to build websites with low-tech in mind, but tools and knowledge are available to build such platforms.

Fields that could appear distant, such as accessibility, project management and eco-design, have contact points that can be used for synergies. The partnership brings together participants with complementary profiles (eAccessibility experts, technical specialists on web creation and content management, digital project managers in the culture, education and innovation sectors, digital entrepreneurs, digital trainers. Thus, through the production and management of this platform and the content it hosts, we expect awareness raising, training and exchange of good practices between participating organisations in eco-design, e-accessibility and inclusive eco-project management.

PROJECT LOGS

Project logs are monthly updates that took place during the main development phase of the platform. They can be seen as direct feedback while we were testing tools and solutions, as well as our questioning. It is a great tool to see how far we have come, what has worked and what has not. The “logs” are thematic and therefore can help anyone having questions on this specific domain. Project logs have been used as the starting point for this guide. The reflections and conclusions resulting from the preparatory stages and their application can be found in this guide, analysed and ready to use for those who need to create a platform based on our model.

PLATFORM SPECIFICATIONS

We needed to list the elements available on the website in order to draw a sitemap and determine the features needed. Below is the content found on the platform in 5 languages:

1. **Guides**
    a. **Platform commented guide**: the current document with the platform specifications, methology used in its definition, its design process and considerations for eco-design and accessibility. It also discusses the technical choices according to our objectives.
    b. **Training implementation guide**: this guide will aim to highlight the pedagogical innovation of the project: the design and development of online training on the principles of micro-learning in a low-tech and inclusive design.
2. **A collection of good practices** (in wiki/collaborative map format) to showcase other low-tech and inclusive initiatives. It needs to be interactive, and organized in filtered categories.
3. **E-learning modules**. Key notions and tools detailed in elearning modules of 100 lessons, exercises and quizzes for each thematics:
    a. **Web eco-design**
    b. **Accessibility**
    c. **Inclusive and sustainable project management**
4. **Project documentation**
    a. Resources and useful links used to document the project
    b. Dissemination activities carried out by internal and external partners (increase the number of events, meetings and interviews, conferences, participation in trade fairs, etc.).
    c. Highlighting of the external contributors to the project

We used three axes to define the platform goals:

1. **Useful** - We aim at delivering quality content based on our experience and expertise. We've tried to avoid unnecessary features.
2. **Sober** - Low-tech approach will guide us in the definition and creation of the technical features of the platform.
3. **Accessible** - Based on WCAG criterias, we work on a virtuous circle between a "low-tech" design and the accessibility of digital content.

TECHNICAL CHALLENGES

From the content of the website and the limits of the project approach, some challenges arise from making an accessible website, with low consumption and/or low-tech, to support 3 e-learning modules and a wiki, in 5 different languages.

The content of the website is produced by partners often specialized in a specific thematic, and not fully aware of the constraints that could come with such challenges. It was important to integrate their needs in the thinking of building a system that will manage the content production as well as its final delivery on a website.

To do so, we have set up a survey listing all the challenges identified before starting the design or the code in more depth. Questions were open and about partners practices, on project management practices, web development, inclusion and accessibility. It was an exploratory phase for everyone involved in the production of the project to get their hands on the main topics of the project.

Through practical exercises, such as evaluating the ecological impact of a website with set tools, we wanted to start a debate internally about how we envision eco-design, accessibility or inclusive project management. There were practices already in places, and new ways of working as well. It helped us define the future technical specifications by setting limits in different aspects of the project.

During the survey, questions soon turned to work habits, to see how ambitious and accessible our project was. Did we need special skills to carry out a project like ours? Did everyone have to be up to date regarding some practices? In the end, the idea was that our project would create a transfer of knowledge and skills as we produced the different outputs, so it was a great opportunity to evaluate how much everyone involved in the project will learn.

MAIN FEATURES

Next steps have been to evaluate the global architecture of the website (general structure, hosting, databases, interactive elements...) from the listed features. This step focused on research as we needed to create a sober and accessible platform, and pay attention to our ecological footprint.

The guides will be available on the platform but are just text or plain PDF files. Beyond **file optimization** and question about their **hosting**, no further research was needed.

Project documentation will be pages on the website, with different frequency of updates. News and events may require more frequent updates of this pages, while resources about the project and the external contributors may be updated once in a while. This differences about update frequency raised the question of **static pages** vs **dynamic pages**, detailed further in this guide.

The collection of good practices is based on **filters** and a set of numerous **sheets**. Visitors should be able to have access to different good practices collected by project contributors, and become contributors as well through a **submission process**.

E-learning modules are a mix of lessons, self-corrected exercises and interactive quizzes. There will be 100 “grains” (short lesson) for each of the three thematics. Multiplied by the 5 languages of the project, the **amount of data** to handle is important. Contributors should be able to **control, edit and translate** the grains along their production. Lessons are organized in sub-notions and integrated in a more global **table of contents**.

After this step and from the identified features, we can list what our website should handle:

- File optimization
- Hosting with low consumption in mind
- Static and dynamic pages
- Important number of items for sheets (good practices) and lessons (e-learning modules)
- Filtering and indexing content
- Accepting external submissions
- Allowing contributors to add and edit content easily

DESIGN CHALLENGES

Beyond the main features, the platform is accessible and needs to remain so. We have decided to design the website following the WCAG and other accessibility guidelines. Of course, we've turned our attention to contrast, text size and accessible interactive elements. But content also needs to be accessible in its language level and length.

From the beginning, the platform has been designed to be ecologically **sober**, with a **pleasant** graphical design. It could seem opposite, and we had to think about the fonts and images we wanted to use, and why.

The platform has been designed to give access to numerous elements, through e-learning modules and the collection of good practices. It was important to find a way to organize all of this content and keep the website functional.

The website is accessible and low-tech. One of the questions that followed us throughout the project is how adding code for accessibility will not threaten our low consumption approach? In the end, we didn't evaluate how much the website has been made heavier because of accessibility features, simply because we chose to not make savings in this area. Images and heavy resources and media were considered instead.

To remain accessible, we did frequent checkups after platform updates, to spot any new issues that could be added along the way. Quality evaluation for accessibility was done with various tools and browser plugins, such as WAVE or axe.

For the ecodesign part, we wanted to evaluate several points:

- page weight
- associated page loading time
- sources of weight
- number of server requests
- equivalent in CO2

All this elements are accessible in the developer console, embedded in every web browser. We also used the ecoindex (or through its plugin) to evaluate the equivalent in CO2 from the number of DOM elements on pages, weight of the different pages and the number of server requests. This index is displayed on the website to encourage visitors testing their own websites. Another tool used for ecodesign was Carbonalyser, that:

- Counts the amount of data transmitted through the web browser
- Converts this traffic to power consumption (following the « 1byte » model developed by The Shift Project),
- Converts this power consumption in CO2 emissions, depending on the geographical area.

DEVELOPMENT

For the development process, we delivered new updates to the website along the way. Some pages are still not delivered at the time of writing this guide, following the calendar of the different productions. The idea was to have a work-in-progress platform, to start the natural search engine referencing and start testing already available features and content.

Some production, such as the lessons for e-learning modules, can be complex for contributors without a preview of the final result. We've decided to publish some already finished lessons online, before the official output, in order to give insights to contributors. The same applies to good practices publication: as the collection of good practices is a long process, followed by translations, some good practices were published in english while not all have been collected or translated.

TECHNICAL GUIDE

We will detail the technical choices made for The Good Manager website. We will talk about hosting and coding, as well as content management. This section is technical and intended for developers or project managers. Some notions might not be explained in detail and could require some basic knowledge in programming.

HOSTING

Hosting a website

Hosting is the act of storing datas and running servers to operate a service, such as a website. Hosting solutions have different impacts on the platform's ecological footprint. But how to evaluate it? We can have a look at hardware and energy usages.

Some websites conscious of the ecological impact of the web tend to **self-host** in order to have full control over their hardware and software consumption. This is the case of Low-Tech Magazine, a solar-powered website hosted on a micro-computer (source). With this kind of self-hosting, **hardware and energy sources are under control**, and a server can even be built from old hardware parts and using renewable energy. This choice can be tricky without the technical knowledge of how to administrate a server, or the time to do it.

A single website that requires such an infrastructure raises questions about its effectiveness and its actual footprint. Is running a micro-computer and using solar-panel for a single website energy-effective? What level of technical knowledge and maintenance frequency is required? Beyond the empowerment of running its own web server, we can wonder if mutualization of resources and hardware is not a better solution to reduce the ecological? This is exactly what **data centers** do.

Data centers are places that concentrate many servers and share the resources necessary for their operation. As a result, they consume huge amounts of energy, but pooling consumption helps to **reduce the individual footprint** of each site.

Our choice regarding hosting is to be hosted at infomaniak. This hosting provider has numerous engagements in reducing its ecological footprint by recycling policies, energy management, hardware pooling…

Optimization

In addition, the optimization and management of hardware and power consumption are managed by professionals. It is not a question of relying totally on experts, but the economies of scale of such structures are an interesting solution when infrastructure management is not our core expertise.

Our goal is to have a low-tech platform, and **browser cache** plays a crucial role in reducing the number of requests and the bandwidth needed. Setting the right parameters to have resources that expire when new content is updated is key.

Apache server can have a Gzip file compression enable to reduce the size of file transferred to the visitors. This is a good way to reduce bandwidth by default!

WEBSITE DEVELOMENT

We host a mix of static pages (guides, e-learning modules) and dynamic content (news, documentation). Update frequency of the content can be kept low, as we will deliver in batch some content and will stay more or less the same after, while news and documentation is not so frequent.

Reducing the energy consumption of a website on the client-side requires understanding the cost in computing power of, for example, CSS animations and scripts. Server requests for images and other media also have an impact on the energy consumption (client-side, server-side, and for the network).

The chosen layout of a website and its elements will impact accessibility as well. Many rules regarding the layout should be considered for inclusiveness. Many tools are available for developers and designers to produce accessible and low-consumption websites, but they must be aware of these matters. For example, making an accessible website requires

for developers a good knowledge of semantic HTML, and may require advanced CSS and Javascript.

Beyond the availability of appropriate tools for building accessible and lightweight websites, team members should make these tools their own. Some habits of development relying on specific tools block the adoption of more efficient technology or good practices. Training of teams to new tools and workflow is therefore part of the change.

Our choice regarding design and development is to work with a static website generator (Gatsby) to keep the number of server requests as low as possible (compared to a Wordpress or Drupal website) while keeping a great freedom in the implementation of the design.

A static website generator will compile static pages (HTML + CSS + Javascript) from templates and content that can be stored externally. During the compilation, it will fetch all the resources it needs to build the pages. In our case, content is stored on flat files, but could be on distant databases.

The advantage of this technology is to generate pages beforehand, avoiding back and forth between clients and the server, reducing the overall bandwidth. Another advantage of static files is that it is much more resilient that a website based on PHP and databases for example. Static files can be deployed on any kind of hosting, quickly and without further configuration. In a low tech approach, static pages and their resilience is a great asset!

IMAGES

Media such as images or videos can weight a lot in a page. Since the beginning of the platform, we have decided to limit the number of images on the page in order to reduce its size. The current layout contains four images, in addition to the favicon:

- The Good Manager logo
- Erasmus+ logo
- Background "lemniscate"
- Language switcher bubble
- Partners logo

We've used svg images to reduce their size and optimize their display. The total weight of images is currently 100kb, which is really low.

We are using Gatsby to generate static pages from a variety of sources and files. Gatsby handles images that are not natively optimized for the web. According to the Gatsby documentation, here is a list of how Gatsby can optimize images:

- Loads the optimal size of image for each device size and screen resolution
- Holds the image position while loading so your page doesn't jump around as images load
- Uses the "blur-up" effect i.e. it loads a tiny version of the image to show while the full image is loading
- Alternatively provides a "traced placeholder" SVG of the image
- Lazy loads images, which reduces bandwidth and speeds the initial load time
- Uses WebP images, if browser supports the format

We delegate the responsibility of image optimization by using this kind of tool. Choosing the correct format, size and compression of an image can be hard for non-technical profiles. Website contributors can rely on a technical solution for a simpler usage.

Images have alternative text in order to be accessible. Some images inside lessons or good practices may have a generic alternative text such as "All media on this site are described by the text nearby". These images are part of a text written to explicit the images, acting as alternative text.

FONTS

We've chosen to use the native fonts of the user. Fonts already existing on the visitor computer might not be the prettiest or the most adapted to our graphic design, but using them is a good way to avoid downloading other fonts. Many websites add fonts from a file or from Google Fonts. Sometimes, even for just a logo!

We've just specified the family of font we wanted to use each time (Serif, Sans Serif, Mono), and let the visitor browser pick the corresponding font. This way, we can respect users' specific settings (or the default browser options) regarding fonts to use, picked for accessibility reasons for example.

MANAGING CONTENT

Usually, a CMS will handle the different content and its versioning. A Wordpress-based website offer tools to deliver on-the-fly optimized images. As we have decided to limit our usage of a dynamic CMS, we've set Gatsby to fulfill this role.

At some point, we've used Wordpress for publishing content. Wordpress was just queried for datas at compilation by Gatsby (through its Rest API), and we use the Wordpress back-office to organize the content. This system changed in order to lower our server usage.

Instead of using Wordpress and a MySQL database, we store data on flat files, like markdown files or excel, and extract their content to compile pages with Gatsby. We see two advantages:

- No need to organize a heavy library and many custom post types in Wordpress.
- No more copy-pasting between files delivered on Dropbox and Wordpress to upload content. What is delivered in a Dropbox folder is directly converted to a webpage, reducing the number of mistakes and intermediary documents.

Dropbox is a tool we need to work remotely with partners all around Europe, despite its ecological impact. For us, Dropbox is used as a storage space, a collaborative workspace and a version management system. Maximising the use of this tool seems to be a good idea to limit our footprint instead of multiplying steps and storage spaces.

Content publishing

Content creation is the real value added to the platform. We aim at delivering useful content and we need to manage this content accordingly.

We conducted a survey to evaluate the editorial habits of our team and pick the tools with the least friction possible. For now, the content produced in the project lives in a shared dropbox, and its content is being compiled by Gatsby (with a manual trigger). A site generator can gather different sources of data (dropbox, Wordpress API) and build a static website with the data at a given time. This way, we could keep using tools we are used to and convenient while offering content on a lightweight platform.

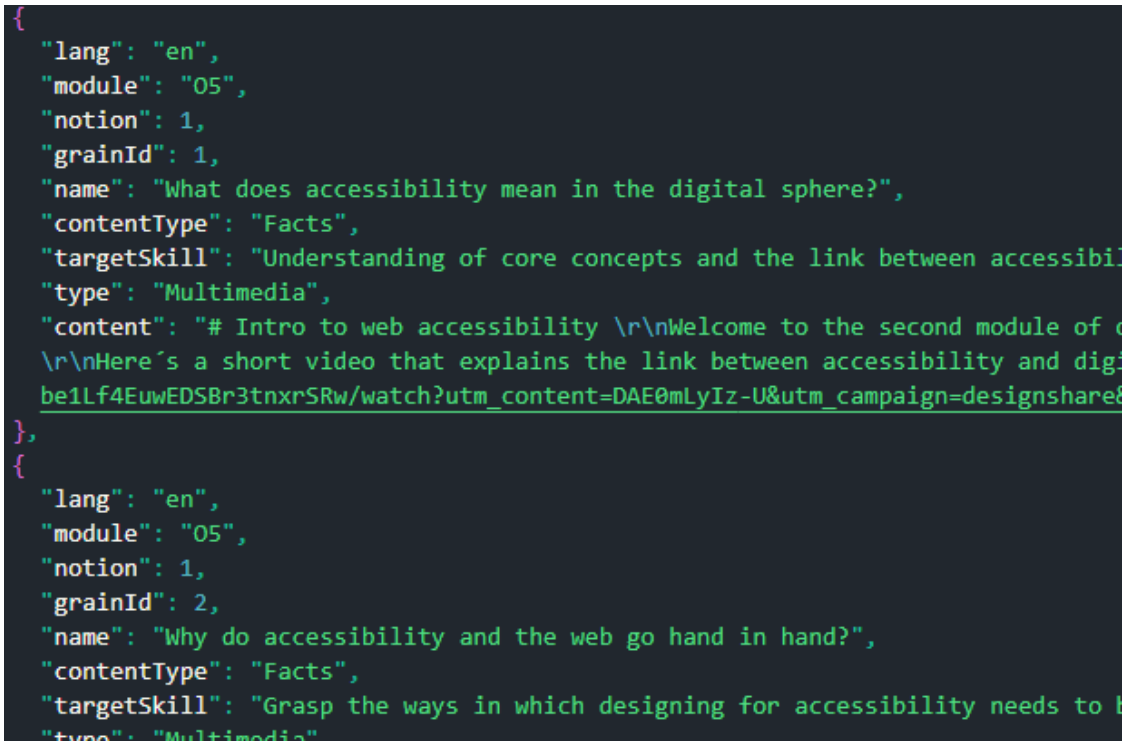
Tools we use on a daily basis in this partnership, like Dropbox, Slack, or Google Suite, have an ecological impact. We strive to evaluate it, or at least to evaluate our usage of them. These tools are necessary for the proper functioning of the project. It might not be the case in another context, and you should adapt the workflow to your context and technical level.

The interactive good practice collection aims to showcase actors, digital achievements and tools that combine innovation with inclusion and improving the environmental impact of digital. We aim to create a wiki-like experience, with a standardized sheet for each new good practice. Partners will conduct interviews with different actors to identify those good practices, and will fill a standardized document. This document will live on the dropbox for collaborative work (translations made by other partners) and further corrections. Then, this document will be processed to automatically create a page on the platform. This logic applies also for lessons written by partners in an excel file and then processed to create complete e-learning modules.

Automatic creation

The excel file filled by interviewers or for lessons are processed to produce a JSON, a specific format easily readable by Gatsby. We can now sort and filter the good practices easily and display them as a list on the appropriate page.

At first, we've used Wordpress to publish and translate plain text. A complete CMS was a bit overkill for this. We switched to spreadsheets and text files, hosted on dropbox for collaborative work and version history.



Example of a JSON file for publishing a lesson

Every time we want to build an updated version of the website, we download the files from dropbox to the build folder and execute scripts to transform these files to data for our website, then Gatsby builds it.

We have decided not to have continuous integration nor automatic updates for the platform. There will be a delay when the content is available on the dropbox and its publication, up to a couple of days. This way, we will avoid having a server listening to updates and starting a full website build for a minor modification.

Internationalization

Internationalization of a website is a great part of the user experience. It's part of our objectives to have a localized website for our visitors. The platform is available in 5 languages (English, French, Italian, Bulgarian, Spanish) and is translated by the partners of the project. To handle translations, **the former workflow was:**

1. Publishing the original content in English with Wordpress.
2. Updating an excel file on dropbox with English terms and sentences.
3. Translation phase with partners, updating their column in the excel file.

4. Copy pasting the translated content into the translation module of Wordpress.
5. Checking typos and publishing.

It was long and involved many steps prone to error, especially with copy-pasting. To simplify our translations, we started from the tools used and known (dropbox and spreadsheets) to reduce the number of steps.

	A	B	C	D	E
1	EN	FR	IT	SP	BG
2	Menu	Menu	Menu	Menu	Меню
3	answer you as soon as possible.	Nous vous répondrons dès que possible.	risponderemo il più presto possibile.	dudes. Te responderemos lo antes posible.	отговорим възможно най-скоро!
4	About	A propos	A proposito	Acerca de	За нас
5	The Project	Le Projet	Il progetto	El proyecto	Проектът
6	Partners	Partenaires	I partner	Socios	Партньори
7	Associated Partr	associés	Partner associati	Asociados	Асоциирани парт
8	Resources	Ressources	Risorse	Recursos	Ресурси
9	Good Practices	pratiques	Buone pratiche	prácticas	Добри практики
10	News	Actualités	Novità	Noticias	Новини
11	More	Plus	Di più	Más	Още
12	Terms of use	d'utilisation	Termini di uso	uso	Условия за полз

Excel file containing all the translations, before being proccessed to JSON

The translation workflow is now:

1. Updating an excel file on dropbox with English terms and sentences.
2. Translation phase with partners, updating their column in the excel file.
3. Excel cells are converted to text with an automatic script, preventing human errors.

If a partner wants to correct a typo or a translation, its modification in the excel file is the only steps required. Next time we build the website, Gatsby will automatically fetch the updated data.

OTHER FEATURES

Some other features require a server delivering dynamic content. We're still using Wordpress for some specific tasks, and Matomo running on a PHP server for analytics.

Contributions

We use Wordpress for setting up the forms of the website: contact and good practice submissions. It is convenient to have a mail server (from the php function) and the logic ready to be used for forms, without using an external service or library.

We also use Wordpress for its media library: Wordpress is well known by contributors, and its media library is an efficient way for them to add images online.

User tracking

Privacy is a major concern. Our habits are getting tracked all over the internet, generating datas and using computing power for, mainly, marketing analysis. Any website could use a bit of user tracking to improve the user experience and make sure its content is available and accessed by visitors.

We have to produce statistics regarding the European Project and visits to this website as well as upcoming e-learning modules. For that, we use **server logs** to measure the number of visits on the platform. We also self-host Matomo. Our web analytics tool is configured to be GDPR compliant. We ensure data collected is anonymous by using the anonymization mode and disabling cookies usage.

We mainly want to know how many visitors we have on our different pages. Server logs show this information clearly. A web analytics tool also, but enriches it with the average time spent on a page, what is the page previously visited on the platform before another one, which website is sending us traffic. We can still monitor how our website is used and what are the most visited pages, while removing any opt-out for tracking visitors to improve the user experience.

Also, by using Matomo, we keep control over data processing: data about visits and other statistics are processed on our server and are not shared with any third-party. Many websites (most of them) use Google Analytics for this task, sending their visitors' data to Google servers for further processing for Google's benefit.

CONCLUSION

This platform was a challenge: building a low-tech design that remains accessible with many different contents and in 5 languages. We are really happy with how we've managed to work altogether to build a system that fits most of our needs.

We've chosen to host the website on a green host, while all the content production is taking place on Dropbox in excel files.

The content is processed to be compiled with Gatsby in static files, while some advanced features are still handled by Wordpress and Matomo. We've used the minimal number of dynamic pages and system that we could in order to reduce the servers request and the global bandwidth.

Limits of this system are:

- Gatsby compilation is done by hand to control when the website is updated. Many options exist to automatize its compilation and deployment, but we've decided to reduce the number of updates. It could be different for higher frequency updates websites.
- We're still using dynamic content and a PHP server for some features such as analytics or forms. These features are convenient, but could eventually be fully replaced by server logs and emails, depending on the level of sophistication required.
- Dropbox is at the core of our content management. We use it to store, edit and collaborate. Moreover, we cannot control its power consumption! We have no idea how bad this tool is for our purpose: reducing the power consumption of a website.
- Other tools are used to collaborate online, with few indicators to evaluate our ecological footprint.

We hope to find new project workflows to do better, each time! If you want to learn more about project management with inclusion and ecological sobriety in mind, have a look at our e-learning modules on the platform.

We also welcome any participation in identifying good practices that combine innovation with inclusion and improving the environmental impact of digital. We hope you'll browse the existing ones and submit yours!